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&lt;120&gt; COMPOSITIONS AND METHODS FOR DETECTING TREPONEMA PALLIDUM

<150> PCT/US00/16425

<150> US 60/138,981

<160> 26

<170> PatentIn version 3.1

<210> 1

<211> 2945

<212> DNA

<213> Treponema pallidum

<220>

<221> CDS

<222> (919) . . (2217)

<223>

 $\langle 220 \rangle$ 

<221> misc feature

<223> Subspecies: pallidum (Nichols strain)

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tccccatctt ccgatactgg atcgggtgtcg gggggagtag gagtggggaa gcgtctgtgc 180

tgtatcgcgc tggatgatgcg cgcgttctgg tacctcagtg cgaagggagt cagtatcgct 240

tacgtgccccg ttcatcgacag tggggggctct caagattcga gcatgagcac agcagtgggc 300

gatacgctcc ttaacgcctt cttcgacgag ggaatggtgg ttacggcagt accgccgggt 360

gtacacgacg gccagactat agcagaaatt gctgcatggt ttgaagtaat gcccgattac 420

gcgttggttg tgcagtttca ttccgctcgt ctccctggtg gggaaagccc tacctcccgt 480

gcccgcggcg cttggtcttc agagaggttc cgtgctgtgt ggacattagt ggattttgcat 540

acgcagcgcg cgtgtgtcta tgcgtgtgtc gccccataca gggagagtat tcccgtttct 600

gagtgtgttg acgtcgttac ccgttgatt gcggagcagg caatttcgta catacgggtg 660

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ggcacgagca ccgatacagc cggagttcag ttatagaaaa tagggaatac gtaaggtgtc      720
tgcagcgtcg cttcagctgg gaggagtctt atgattaaac gccacatggt cgcaaaaagg      780
ggtgtcaaaag gaagatctta cctgggttagg gtgaacactg cgttcttagt gctttgtgtt      840
gcttctgtca cgccgctttg ggctgtgtgg gaaggggaatg cagaaattgg cccccaggga      900
agttttctgc aggacggc  atg ttt gtg cgc agt gac atg ttc ccc aaa aac      951
                   Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn
                   1           5           10

act gct gtt gaa att agc aac tta gaa aag aat gcc aag gct cag gca      999
Thr Ala Val Glu Ile Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala
                   15           20           25

gtg gtt att ggg cac gca ggg atc ccc ggt ctt cta gtt agc ctt gca     1047
Val Val Ile Gly His Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala
                   30           35           40

ccc gct gct gca gca cag ctt ggg att ggc gta tac caa gct gtg cgt     1095
Pro Ala Ala Ala Ala Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg
                   45           50           55

gta cgc gta cgt acc ttg ggt acc gtg cgc ggt ggg tct caa aca agt     1143
Val Arg Val Arg Thr Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser
                   60           65           70           75

cag gac gga ctg tcc ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc     1191
Gln Asp Gly Leu Ser Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg
                   80           85           90

ccc gcg cag cgt gat cct ctg tca tcc ccg ccg gca ggt cac act gta     1239
Pro Ala Gln Arg Asp Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val
                   95           100          105

ccg gaa tat cgc gat acg gtt att ttc gat gac ccg cgt ttg gtt tcc     1287
Pro Glu Tyr Arg Asp Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser
                   110          115          120

cct ttg tct cgt gag gtg gag gac gcg ccg aag gta gtg gag ccg gcc     1335
Pro Leu Ser Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala
                   125          130          135

tct gag cgt gag gga ggg gag cgt gag gtg gag gac gcg ccg aag gta     1383
Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val
                   140          145          150          155

gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac     1431
Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp
                   160          165          170

gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt     1479
Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg
                   175          180          185

gag gtg gag gac gcg ccg aag gta gtg gag ccg gcc tct gag cgt gag     1527
Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu
                   190          195          200

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gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala 205 210 215	1575
tct gag cgt gag gga ggg gag cgt gag gtg gag aac gtg ccg aag gta Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asn Val Pro Lys Val 220 225 230 235	1623
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp 240 245 250	1671
gcg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg 255 260 265	1719
gag gtg gag gac gcg ccg aag gta gtg gag ccg gcc tct gag cgt gag Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu 270 275 280	1767
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tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val 300 305 310 315	1863
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp 320 325 330	1911
gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg 335 340 345	1959
gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu 350 355 360	2007
gga ggg gag cgt gag gtg gag gac gtg ccg ggg gta gtg gag ccg gcc Gly Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala 365 370 375	2055
tct ggg cat gaa gga ggg gag cgt gag gtg gag gac gtg ccg ggg gta Ser Gly His Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val 380 385 390 395	2103
gtg gag ccg gcc tct ggg cat gaa gga ggg gag cgt gag gtc gct tct Val Glu Pro Ala Ser Gly His Glu Gly Gly Glu Arg Glu Val Ala Ser 400 405 410	2151
cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca gct ccc aat Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn 415 420 425	2199
cag ttt cgg aaa ccc tga gggggaactc ccctttacgc tccctgacct Gln Phe Arg Lys Pro 430	2247
atccgagtca gaaattgtgg ttccggagga acagaaagga cgtgcgcac ccaggtgat	2307

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acccgaggggt gcgccacgtg gactgcaacc tggatgaatac tacgtacaga ttgcagtctt 2367
tcatgacgct atccaggtgc agagcattgt ccaccgttac ggggtagaat accccatcgc 2427
agtggagcag gacatccatg aaggtaaggt gcggtttcacc gtatgcgtcg gtctgtcca 2487
aaaagacgaa cgcggcgcgg tactagagaa cttccaaagg tttggattca aggacgcctt 2547
tctgaaaaag gcgcgatgat caggtcggcc ctctcttcc cctcgtgacc gtggtgactc 2607
gccccgaagg gggcgcacag agcccgaagg aacggaaggg aaggggcaga cttaactatt 2667
tctttgtttt tttgagcacg taaaacggcg ccatctcctt tgaaggcttt cctgcgccgg 2727
gagcgcccat gtagcgaacg gagttactgt ctatcagctc gtacagctct ttctcgtgcg 2787
gtgccttcga ttgctccgag gacacaagcg agagtccgac aattccgtct tcacgtacca 2847
tccacgtacc gcgatacgta agaggagaag gtgccgactt cttctcaagg gcaagctcta 2907
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<210> 2
<211> 432
<212> PRT
<213> Treponema pallidum

<220>
<221> misc_feature
<223> Subspecies: pallidum (Nichols strain)

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<400> 2

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Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
          20           25           30

```

```

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala
          35           40           45

```

```

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr
          50           55           60

```

```

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser
65           70           75           80

```

```

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp
          85           90           95

```

```

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
          100          105          110

```

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
115 120 125

Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
130 135 140

Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser  
145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
210 215 220

Gly Glu Arg Glu Val Glu Asn Val Pro Lys Val Val Glu Pro Ala Ser  
225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val  
245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
275 280 285

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
290 295 300

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
305 310 315 320

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
325 330 335

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
340 345 350

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
355 360 365

Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly  
370 375 380

Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser  
385 390 395 400

Gly His Glu Gly Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln  
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Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Lys Pro  
420 425 430

<210> 3  
<211> 699  
<212> DNA  
<213> Treponema pallidum

<220>  
<221> CDS  
<222> (1)..(699)  
<223>

<220>  
<221> misc\_feature  
<223> Subspecies: pertenue (CDC-2 strain)

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agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
20 25 30  
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
35 40 45  
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60  
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80  
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95

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cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat      336
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp
                100                      105                      110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag      384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu
                115                      120                      125

gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga      432
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly
                130                      135                      140

ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct      480
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser
145                      150                      155                      160

gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg      528
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val
                165                      170                      175

gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg      576
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val
                180                      185                      190

ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag      624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu
                195                      200                      205

gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca      672
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser
                210                      215                      220

gct ccc aat cag ttt cgg aaa ccc tga      699
Ala Pro Asn Gln Phe Arg Lys Pro
225                      230

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<210> 4
<211> 232
<212> PRT
<213> Treponema pallidum

<220>
<221> misc_feature
<223> Subspecies: pertenue (CDC-2 strain)

<400> 4

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Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile
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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His
                20                      25                      30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala
35                      40                      45

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Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
195 200 205

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
210 215 220

Ala Pro Asn Gln Phe Arg Lys Pro  
225 230

<210> 5  
<211> 939  
<212> DNA  
<213> Treponema pallidum

<220>  
<221> CDS  
<222> (1)..(939)  
<223>

<220>  
<221> misc\_feature

<223> Subspecies: endemicum (Bosnia strain)

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agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac	96
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His	
20 25 30	
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca	144
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala	
35 40 45	
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc	192
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr	
50 55 60	
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc	240
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser	
65 70 75 80	
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat	288
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp	
85 90 95	
cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat	336
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp	
100 105 110	
acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	432
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
130 135 140	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	480
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
145 150 155 160	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	528
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
165 170 175	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	576
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val	
180 185 190	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu	
195 200 205	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	672
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
210 215 220	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	720

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 225 230 235 240  
 gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg 768  
 Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 245 250 255  
 gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg 816  
 Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 260 265 270  
 ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 864  
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 275 280 285  
 gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca 912  
 Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
 290 295 300  
 gct ccc aat cag ttt cgg aaa ccc tga 939  
 Ala Pro Asn Gln Phe Arg Lys Pro  
 305 310

<210> 6  
 <211> 312  
 <212> PRT  
 <213> Treponema pallidum  
 <220>  
 <221> misc\_feature  
 <223> Subspecies: endemicum (Bosnia strain)  
 <400> 6

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 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
 20 25 30  
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45  
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60  
 Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80  
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95  
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110



Leu Val Ser Pro Leu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu  
1 5 10 15

Pro Ala Ser

<210> 8  
<211> 20  
<212> PRT  
<213> Treponema pallidum  
  
<400> 8

Ser Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu  
1 5 10 15

Arg Glu Gly Gly  
20

<210> 9  
<211> 20  
<212> PRT  
<213> Treponema pallidum  
  
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Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
1 5 10 15

Val Glu Asp Ala  
20

<210> 10  
<211> 21  
<212> PRT  
<213> Treponema pallidum  
  
<400> 10

Pro Lys Asn Thr Ala Val Glu Ile Ser Asn Leu Glu Lys Asn Ala Lys  
1 5 10 15

Ala Gln Ala Val Val  
20

<210> 11  
<211> 25  
<212> PRT  
<213> Treponema pallidum  
  
<400> 11

Gly His Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala





<220>  
 <221> misc\_feature  
 <223> Subspecies: pallidum (Nichols strain)

<400> 19

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Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile	
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agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac	96
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His	
20 25 30	
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca	144
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala	
35 40 45	
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc	192
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr	
50 55 60	
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc	240
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser	
65 70 75 80	
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat	288
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp	
85 90 95	
cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat	336
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp	
100 105 110	
acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gtg gag gac gcg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	432
Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
130 135 140	
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Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser	
145 150 155 160	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	528
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
165 170 175	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gcg	576
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala	
180 185 190	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu	
195 200 205	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	672
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	



210	215	220	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser 225 230 235 240			720
gag cgt gag gga ggg gag cgt gag gtg gag gac gcg ccg aag gta gtg Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val 245 250 255			768
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gcg Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala 260 265 270			816
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu 275 280 285			864
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly 290 295 300			912
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser 305 310 315 320			960
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val 325 330 335			1008
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val 340 345 350			1056
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu 355 360 365			1104
gtg gag gac gtg ccg ggg gta gtg gag ccg gcc tct ggg cat gaa gga Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly 370 375 380			1152
ggg gag cgt gag <sup>4</sup> gtg gag gac gtg ccg ggg gta gtg gag ccg gcc tct Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser 385 390 395 400			1200
ggg cat gaa gga ggg gag cgt gag gtc gct tct cag cat acg aag cag Gly His Glu Gly Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln 405 410 415			1248
cca tcc cac tcg gtt tcc aac tca gct ccc aat cag ttt cgg aac cct Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Asn Pro 420 425 430			1296
gag ggg gaa ctc ccc ttt acg ctc cct gac cta tcc gag tca gaa att Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu Ser Glu Ser Glu Ile 435 440 445			1344
gtg gtt ccg gag gaa cag aaa gga cgt gcg cat ccc cag gtg ata ccc Val Val Pro Glu Glu Gln Lys Gly Arg Ala His Pro Gln Val Ile Pro 450 455 460			1392



Pro	Leu	Ser	Ser	Pro	Pro	Ala	Gly	His	Thr	Val	Pro	Glu	Tyr	Arg	Asp
			100					105					110		
Thr	Val	Ile	Phe	Asp	Asp	Pro	Arg	Leu	Val	Ser	Pro	Leu	Ser	Arg	Glu
		115					120					125			
Val	Glu	Asp	Ala	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly
	130					135					140				
Gly	Glu	Arg	Glu	Val	Glu	Asp	Ala	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser
145					150					155					160
Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val
				165				170						175	
Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Ala
			180					185					190		
Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu
		195					200					205			
Val	Glu	Asp	Val	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly
	210					215					220				
Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser
225					230					235					240
Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Ala	Pro	Lys	Val	Val
				245					250					255	
Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Ala
			260					265					270		
Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu
		275					280					285			
Val	Glu	Asp	Val	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly
	290					295					300				
Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser
305					310					315					320
Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val
				325					330					335	
Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Val

340

345

350

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 355 360 365

Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly  
 370 375 380

Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser  
 385 390 395 400

Gly His Glu Gly Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln  
 405 410 415

Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Asn Pro  
 420 425 430

Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu Ser Glu Ser Glu Ile  
 435 440 445

Val Val Pro Glu Glu Gln Lys Gly Arg Ala His Pro Gln Val Ile Pro  
 450 455 460

Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu Tyr Tyr Val Gln Ile  
 465 470 475 480

Ala Val Phe His Asp Ala Ile Gln Val Gln Ser Ile Val His Arg Tyr  
 485 490 495

Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp Ile His Glu Gly Lys  
 500 505 510

Val Arg Phe Thr Val Cys Val Gly Pro Val Gln Lys Asp Glu Arg Gly  
 515 520 525

Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe Lys Asp Ala Phe Leu  
 530 535 540

Lys Lys Ala Arg  
 545

<210> 21  
 <211> 1047  
 <212> DNA  
 <213> Treponema pallidum

<220>

<221> CDS  
<222> (1)..(1047)  
<223>

<220>  
<221> misc\_feature  
<223> Subspecies: pertenu (CDC-2 strain)

<400> 21  
atg ttt gtg cgc agt gac atg ttc ccc aaa aac act gct gtt gaa att 48  
Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
1 5 10 15  
agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
20 25 30  
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala  
35 40 45  
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60  
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80  
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95  
cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110  
acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag 384  
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
115 120 125  
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 432  
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
130 135 140  
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct 480  
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
145 150 155 160  
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg 528  
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
165 170 175  
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg 576  
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
180 185 190  
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 624  
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu

195	200	205	
gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca			672
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser			
210	215	220	
gct ccc aat cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc			720
Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu			
225	230	235	240
cct gac cta tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga			768
Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly			
	245	250	255
cgt gcg cat ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa			816
Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln			
	260	265	270
cct ggt gaa tac tac gta cag att gca gtc ttt cat gac gct atc cag			864
Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln			
	275	280	285
gtg cag agc att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtg			912
Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val			
	290	295	300
gag cag gac atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt			960
Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly			
305	310	315	320
cct gtc caa aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg			1008
Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg			
	325	330	335
ttt gga ttc aag gac gcc ttt ctg aaa aag gcg cga tga			1047
Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg			
	340	345	

&lt;210&gt; 22

&lt;211&gt; 348

&lt;212&gt; PRT

&lt;213&gt; Treponema pallidum

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;223&gt; Subspecies: pertenue (CDC-2 strain)

&lt;400&gt; 22

Met	Phe	Val	Arg	Ser	Asp	Met	Phe	Pro	Lys	Asn	Thr	Ala	Val	Glu	Ile
1				5					10					15	

Ser	Asn	Leu	Glu	Lys	Asn	Ala	Lys	Ala	Gln	Ala	Val	Val	Ile	Gly	His
		20					25						30		

Ala	Gly	Ile	Pro	Gly	Leu	Leu	Val	Ser	Leu	Ala	Pro	Ala	Ala	Ala	Ala
	35						40				45				

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
195 200 205

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
210 215 220

Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu  
225 230 235 240

Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly  
245 250 255

Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln  
260 265 270

Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln  
275 280 285

23



acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	432
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
130 135 140	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	480
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
145 150 155 160	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	528
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
165 170 175	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	576
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val	
180 185 190	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu	
195 200 205	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	672
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
210 215 220	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	720
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
225 230 235 240	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	768
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
245 250 255	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	816
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val	
260 265 270	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	864
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu	
275 280 285	
gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca	912
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser	
290 295 300	
gct ccc aat cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc	960
Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu	
305 310 315 320	
cct gac cta tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga	1008
Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly	
325 330 335	
cgt gcg cat ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa	1056
Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln	
340 345 350	
cct ggt gaa tac tac gta cag att gca gtc ttt cat gac gct atc cag	1104

Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln  
 355 360 365

gtg cag agc att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtg 1152  
 Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val  
 370 375 380

gag cag gac atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt 1200  
 Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly  
 385 390 395 400

cct gtc caa aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg 1248  
 Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg  
 405 410 415

ttt gga ttc aag gac gcc ttt ctg aaa aag gcg cga tga 1287  
 Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg  
 420 425

<210> 24  
 <211> 428  
 <212> PRT  
 <213> Treponema pallidum

<220>  
 <221> misc\_feature  
 <223> Subspecies: endemicum (Bosnia strain)

<400> 24

Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
 1 5 10 15

Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
 20 25 30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125

Val	Glu	Asp	Val	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	130	135	140	
Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	145	150	155	160
Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val	165	170	175	
Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	180	185	190	
Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	195	200	205	
Val	Glu	Asp	Val	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	210	215	220	
Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	225	230	235	240
Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	Pro	Lys	Val	Val	245	250	255	
Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	Val	260	265	270	
Pro	Lys	Val	Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	275	280	285	
Val	Ala	Ser	Gln	His	Thr	Lys	Gln	Pro	Ser	His	Ser	Val	Ser	Asn	Ser	290	295	300	
Ala	Pro	Asn	Gln	Phe	Arg	Asn	Pro	Glu	Gly	Glu	Leu	Pro	Phe	Thr	Leu	305	310	315	320
Pro	Asp	Leu	Ser	Glu	Ser	Glu	Ile	Val	Val	Pro	Glu	Glu	Gln	Lys	Gly	325	330	335	
Arg	Ala	His	Pro	Gln	Val	Ile	Pro	Glu	Gly	Ala	Pro	Arg	Gly	Leu	Gln	340	345	350	
Pro	Gly	Glu	Tyr	Tyr	Val	Gln	Ile	Ala	Val	Phe	His	Asp	Ala	Ile	Gln	355	360	365	

Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val  
370 375 380

Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly  
385 390 395 400

Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg  
405 410 415

Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg  
420 425

<210> 25  
<211> 1182  
<212> DNA  
<213> Treponema pallidum

<220>  
<221> CDS  
<222> (1)..(1182)  
<223>

<220>  
<221> misc\_feature  
<223> Subspecies: pertenue (CDC-1 strain)

<400> 25  
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Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
1 5 10 15  
  
agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
20 25 30  
  
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
35 40 45  
  
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60  
  
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80  
  
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95  
  
cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc	432
Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala	
130 135 140	
tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta	480
Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val	
145 150 155 160	
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac	528
Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu Val Glu Asp	
165 170 175	
gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt	576
Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg	
180 185 190	
gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag	624
Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu	
195 200 205	
gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc	672
Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala	
210 215 220	
tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta	720
Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val	
225 230 235 240	
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtc gct tct	768
Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Ala Ser	
245 250 255	
cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca gct ccc aat	816
Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn	
260 265 270	
cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc cct gac cta	864
Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu	
275 280 285	
tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga cgt gcg cat	912
Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly Arg Ala His	
290 295 300	
ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa cct ggt gaa	960
Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu	
305 310 315 320	
tac tac gta cag att gca gtc ttt cat gac gct atc cag gtg cag agc	1008
Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln Val Gln Ser	
325 330 335	
att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtg gag cag gac	1056
Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp	
340 345 350	

atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt cct gtc caa 1104  
 Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly Pro Val Gln  
           355                                  360                                  365

aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg ttt gga ttc 1152  
 Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe  
           370                                  375                                  380

aag gac gcc ttt ctg aaa aag gcg cga tga 1182  
 Lys Asp Ala Phe Leu Lys Lys Ala Arg  
           385                                  390

<210> 26  
 <211> 393  
 <212> PRT  
 <213> Treponema pallidum

<220>  
 <221> misc\_feature  
 <223> Subspecies: pertenue (CDC-1 strain)

<400> 26

Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
   1                                  5                                  10                                  15

Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
                                   20                                  25                                  30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
           35                                  40                                  45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
           50                                  55                                  60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
   65                                  70                                  75                                  80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
                                   85                                  90                                  95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
                                   100                                  105                                  110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
           115                                  120                                  125

Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala  
           130                                  135                                  140

Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val

145 150 155 160

Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp  
165 170 175

Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg  
180 185 190

Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu  
195 200 205

Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala  
210 215 220

Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val  
225 230 235 240

Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Ala Ser  
245 250 255

Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn  
260 265 270

Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu  
275 280 285

Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly Arg Ala His  
290 295 300

Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu  
305 310 315 320

Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln Val Gln Ser  
325 330 335

Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp  
340 345 350

Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly Pro Val Gln  
355 360 365

Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe  
370 375 380

Lys Asp Ala Phe Leu Lys Lys Ala Arg  
385 390